REMARKS

Amendments to the Specification

In the specification, the paragraphs [0025], [0035] and [0036] have been amended to correct minor editorial problems. These corrections are believed to remove the grounds for the Examiner's objection to the drawings. Specifically, the Examiner objected to the use of the reference character "650" in Fig. 6 of the application because the reference character was used to designate both "operating wavelength range" and "gain" on page 7 of the specification (paragraph [0036]). Paragraph [0036] has accordingly been amended to remove the use of reference character "650" in connection with the term "gain." However, as may be seen from the text of paragraphs [0054] and [0055] of the specification as filed, the terms "operating wavelength range," "gain curve" and "gain bandwidth" are synonymous in the context of the present application. The amendment to paragraph [0025] is accordingly made to include all of these synonymous terms in the brief description of the Figures, with where the reference character "650" first appears. Paragraph [0035] is amended to remove the reference characters "601" and "602" which are believed to be absent from the drawings as filed.

Patentability over the Art of Record

Claims 1-20 remain in this application. Claims 2, 5, 6 and 19 have been indicated to be allowable if written in independent form. The remaining claims currently stand rejected as anticipated by Fermann (US 2002/0172486 A1) or as obvious over Fermann in view of other references.

Claim 1 recites, in part, "a linearly birefringent and linearly dichroic optical waveguide", claim 18 recites, in part, "a double-clad linearly birefringent and linearly dichroic fiber" and claim 20 recites, in part, "providing an optically active linearly birefringent and linearly dichroic fiber." Applicants respectfully submit that Fermann neither discloses nor suggests this feature of the claimed invention.

As disclosed in paragraph [0037] of the specification of the present application,

> As used here, the term "linearly birefringent" means that the two principal states of propagation of the medium in question are linearly polarized and that such two linear states of polarization have different effective real part (refractive index) of the propagation constants. The additional limitation of "linearly dichroic" means that the states of polarization also have different imaginary part (loss) of the propagation constant.

Although Fermann uses the term "single-polarization" to refer to lasers and amplifiers in the title, and to refer to optical fiber in paragraph [0001], and to "optical fiber cavities" in paragraph [0009] and to pulse states in paragraph [0081] of the specification, the use of the term is understood to be nonstandard by the present Applicants, and the Fermann disclosure actually teaches away from the present invention. Fermann exclusively teaches the use of what is commonly termed polarization maintaining ("PM") fiber, fiber in which two orthogonally polarized modes launched into one end of the fiber are maintained, that is, fiber in which leaking of signal from mode to the other mode is minimized, but both modes are preserved. This is apparent from the whole of the Fermann disclosure, but may be seen particularly, for example, from paragraphs [0071] and [0072] with the accompanying TABLE 1. As defined by Fermann in paragraph [0071], "polarization extinction" is "the relative amount of light that couples into the 2nd polarization axis (measured at the fiber output end) of the fiber when the light is coupled into the input end in the 1st polarization axis of the fiber." The results in Table I accordingly purport to measure only polarization holding capability.

> In contrast, as disclosed in the present application in paragraph [005] for example:
>
> For linear or single polarization, it is desirable to obtain an optical polarizing (PZ) fiber which receives randomly elliptically polarized input light and provides output light polarized only along a single polarization. The polarization characteristic (single polarization) propagates one, and only one, of two orthogonally polarized polarizations while suppressing the other polarization by increasing its transmission loss. Such single polarization fibers generally have an azimuthal asymmetry of the refractive index profile. Single polarization optical fibers are useful for ultra-high speed transmission systems or for use as a coupler fiber for use with and connection to optical components . . .

5

The fibers disclosed for use in the present invention thus do not transmit and maintain two polarization modes, rather, they transmit one mode and reduce or eliminate the other by attenuation. The fibers used in the present invention transmit one polarization mode and suppress the other, while the fibers in Fermann merely maintain, to the degree possible, the initial polarization.

That the devices and methods disclosed in Fermann do not involve suppressing or eliminating the second polarization mode is further confirmed, for example, by the discussion in paragraph [0081] of Fermann, wherein is alleged that

> only the fibers with low values of birefringence and correspondingly long beat lengths produced stable modelocking. The reason is that for small values of birefringence, the main signal propagating in the first polarization axis and any secondary signal propagating in the second polarization axis lock together producing a single coupled polarization state which can oscillate inside the cavity. When the birefringence of the fiber is too high, the main signal and the secondary signal tend to unlock leading to unstable and time-varying operation of the modelocking process

Thus Fermann purports to disclose a way of stabilizing modelocking or mode coupling between the two polarization modes within a polarization maintaining fiber. Nothing is said or in any way suggested about using a dichroic fiber or waveguide, that is, a fiber or waveguide with different loss in two polarization modes, as recited in the independent claims of the present application quoted above.

For the above reasons, the independent claims containing the above-quoted recitations are believed to be allowable over the art of record. The dependent claims of the present application all contain by reference one of the above-quoted recitations, and are believed to be likewise allowable on at least this basis.

Applicants believe that no extension of time is necessary to make this Response timely. Should Applicants be in error, Applicants respectfully request the Office grant such time extension pursuant to 37 C.F.R. § 1.136(a) as necessary to make this Response timely, and hereby authorizes the Office to charge any necessary fee or surcharge with respect to said time extension to the deposit account of the undersigned firm of attorneys, Deposit Account 03-3325.
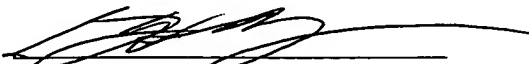
Please direct any questions or comments to Gregory V. Bean at (607)974-3332.

Respectfully submitted,

CORNING INCORPORATED

Date: 8 Nov '05

Gregory V. Bean

Registration No. 36448

Corning Incorporated

Patent Department

Mail Stop SP-TI-03-1

Corning, NY 14831

CERTIFICATE OF MAILING UNDER 37 C.F.R. §
1.8: I hereby certify that this paper and any papers referred to herein are being deposited with the U.S. Postal Service, as first class mail, postage prepaid, addressed to Commissioner of Patents, Alexandria, VA 22313-1450 on _8 Nov 05_

Gregory V. Bean, Signature